



## Frequently Asked Questions about Diabetes: Overview

### What is diabetes?

Simply stated, diabetes means the body has lost its main source of fuel, and the body cannot survive without fuel. Diabetes is a condition in which the pancreas, a little organ near the stomach that produces insulin (a hormone), can't make enough insulin or the body can't use the insulin properly. Insulin is important because it helps get glucose (a sugar that comes from most of the foods we eat) into our cells for energy. With diabetes, glucose builds up in the blood instead of being used for energy. Diabetes is a serious and growing problem. An estimated 17 million Americans have diabetes, but only 11.1 million cases are diagnosed. About nine million women have diabetes, and about a third of these don't even know they have it! It is the 5<sup>th</sup> leading cause of death in women.

Diabetes can lead to serious, even life-threatening complications and serious damage to many parts of the body: the heart, eyes, kidneys, blood vessels, nerves, gums and teeth, feet and legs. Unfortunately, many people first become aware that they have diabetes when they develop one of these problems. Women with diabetes face special concerns, like an increased risk of vaginal infections and complications during pregnancy.

### What are the different types of diabetes?

The three main types of diabetes are:

- Type 1 diabetes, also known as juvenile-onset or insulin-dependent diabetes mellitus (IDDM)
- Type 2 diabetes, also known as adult-onset or noninsulin-dependent diabetes mellitus (NIDDM)
- Gestational diabetes.

**Type 1 diabetes** usually occurs in children and young adults and is considered an autoimmune disease. An autoimmune disease results when the body's system for fighting infection (the immune system) turns against a part of the body. In type 1 diabetes, the immune system attacks the insulin-producing beta cells in the pancreas and destroys them. The pancreas then produces little or no insulin, thereby preventing cells from taking up sugar from blood. Someone with type 1 diabetes needs daily injections of insulin to live. She also needs to follow a strict diet and monitor her blood sugar levels.

Symptoms include increased thirst and urination, constant hunger, weight loss, blurred vision, and extreme tiredness. If not diagnosed and treated with insulin, a person can lapse into a life-threatening coma.

**Type 2 diabetes** is the most common form of diabetes. About 90 to 95 percent of people with diabetes have type 2 diabetes. This form of diabetes usually develops in adults over the age of 40 and is most common among adults over age 55. About 80 percent of people with type 2 diabetes are overweight.

In type 2 diabetes, the pancreas usually produces insulin, but for some reason, the body cannot use the insulin effectively. The end result is the same as for type 1 diabetes—an unhealthy buildup of glucose in the blood and an inability of the body to make efficient use of its main source of fuel.

The symptoms of type 2 diabetes develop gradually and are not as noticeable as in type 1 diabetes. Symptoms include feeling tired or ill, frequent urination (especially at night), unusual thirst, weight loss, blurred vision, frequent infections, and slow healing of sores.

**Gestational diabetes** develops or is discovered during pregnancy. This type usually disappears when the pregnancy is over, but women who have had gestational diabetes have a greater risk of developing type 2 diabetes later in their lives. Gestational diabetes occurs in 2 to 5 percent of pregnancies and at higher rates among African Americans, Hispanic Americans/Latinos, and Native Americans/Alaska Natives.

## Who is at risk for diabetes?

Members of African American, Native American/Alaska Native, Asian American, Hispanic American/Latino, and Native Hawaiian/Pacific Islander ethnic groups are at increased risk for diabetes.

Other things that can put you at higher risk for developing diabetes include:

- Being more than 20 percent above your ideal body weight
- Having a mother, father, brother, or sister with diabetes
- Giving birth to a baby weighing more than 9 pounds or having diabetes during pregnancy
- Having high blood pressure (140/90 or higher)
- Having abnormal blood lipid levels, such as low HDL (good) cholesterol (less than 35 milligrams per deciliter (mg/dL)), or high triglycerides (greater than 250 mg/dL)
- Having abnormal glucose tolerance in an earlier diabetes test.

## What are the signs and symptoms of diabetes?

People with type 2 diabetes often do not have symptoms, but you might have one or more of these signs:

- being very thirsty or hungry
- urinating often (especially at night)
- feeling very tired
- losing weight without trying
- slow healing sores
- very dry, itchy skin
- tingling or numbness in the feet or hands

- sudden vision changes
- more infections than usual (including frequent vaginal yeast and bladder infections, among others, in women)
- nausea, vomiting, or stomach pain (might come with the sudden development of juvenile diabetes)

## What tests are used to diagnose diabetes?

A diagnosis of diabetes can be confirmed by a series of tests that might include:

- **A blood test that measures the glucose in your blood.** A blood glucose level of 200 milligrams per deciliter (mg/dL) or greater, with symptoms, means that you have diabetes.
- **A blood test for glucose after you have fasted, called fasting plasma glucose (FPG) value.** An FPG value of 126 mg/dL or greater means that you have diabetes.
- **A measurement of glucose in your blood through an oral glucose tolerance test (OGTT).** Although this test is no longer recommended because it is cumbersome, some health care providers may still use it. After fasting, you have to drink a glucose syrup and have a blood sample taken 2 hours later. An OGTT value of 200 mg/dL or greater means that you have diabetes.

People with test results between "normal" and "diabetes" levels have impaired glucose metabolism and are at risk for developing diabetes, heart attacks, and strokes.

## Who should be tested for diabetes?

If you are 45 years old or older, you should be tested for diabetes. If your test result is normal, you should then be tested every three years. People under age 45 should be tested if they are at high risk for diabetes.

It is now recommended that pregnant women who are at low risk for gestational diabetes do not need to be tested. This low-risk group includes women who meet **all** of the following criteria: are younger than 25 years old, are at normal body weight, without a family history of diabetes, and not members of a high-risk ethnic group. Other women should be tested for diabetes during the 24<sup>th</sup> to 28<sup>th</sup> weeks of pregnancy. You will be asked to drink a glucose drink and have a blood test one hour later. If your blood glucose value is 140 mg/dL or greater, your health care provider will most likely want to do more tests before diagnosing you with diabetes.

## How is diabetes treated?

Diabetes treatment is focused on keeping blood sugar in a normal range every day. A recent major study showed that keeping blood glucose levels as close to normal as safely possible reduces the risk of developing major complications of type 1 diabetes.

If you have diabetes, a good blood sugar range is from about 70 to 150 (before a meal) and less than 200 about two hours after your last meal. Ask your health care provider what the best range of blood sugar is for you, how to test your blood sugar and how often. Careful meal planning and exercise to control your weight are important to control your diabetes. Your health care provider will evaluate if you need diabetes pills or insulin shots.

Your health care provider can also help you develop a plan for things you should do every day to take care of your diabetes, including following a healthy eating plan (eat your meals and snacks around the same time each day) and being active for a total of 30 minutes most days. If you do need diabetes medicine, take it at the same times every day. Test your blood sugar and record it in a diary, then call your health care provider if your numbers are too high or too low for two to three days. If you have high blood pressure, take your medicine exactly as prescribed. Check your bare feet for cuts, blisters, sores, swelling, redness, or sore toenails (use a mirror if you have trouble seeing the bottom of your feet). Brush and floss your teeth twice a day. And, don't smoke!

Since diabetes can cause serious problems for other parts of your body, you can help detect these problems early by: having an eye exam once a year, even if your eyes seem okay; having a dentist clean and check your teeth and gums twice a year; and having your urine tested at least once a year (to make sure your kidneys are healthy). See your health care provider right away if you have signs of a urinary tract, bladder, or kidney infection.

## **Can diabetes be prevented?**

The Diabetes Prevention Program (DPP) Clinical Trial conducted by the National Institutes of Health showed that the onset of type 2 diabetes could be prevented or delayed in people at high risk by losing 5 to 7 percent of body weight and getting 30 minutes of physical activity such as brisk walking on most days. The good news is that these lifestyle changes worked for men and women, for people of every ethnic or racial group who participated in the study, and it was especially successful for people over age 60. To help you lose weight, eat a healthy diet that includes a balance of all the food groups, with less fatty foods, foods lower in cholesterol, and more foods rich in fiber. Too much fat or cholesterol and inactivity can make you overweight and prevent your body from functioning effectively. Not being able to regulate blood sugar correctly is one effect. Cut down on fat and cholesterol by choosing low-fat dairy products, lean cuts of meat, more fish and poultry without the skin, and margarine instead of butter. Also, limit foods high in salt and sugar.

To find out how people can prevent or delay type 1 diabetes, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) is sponsoring a nationwide study called the Diabetes Prevention Trial-Type 1 (DPT-1). The study is recruiting people who have close relatives with the disease, since they have an increased chance of developing it. Animal research and small studies in people have shown that type 1 diabetes can be delayed in those at high risk with regular, small doses of insulin. So, the DPT-1 study is testing whether type 1 diabetes can be prevented or delayed in humans with insulin injections or insulin capsules. For more information about this study, call 800-HALT-DM1 (800-425-8361).

## **What is hypoglycemia? How is it related to diabetes?**

Hypoglycemia, or low blood sugar, is not diabetes but may occur as a complication of diabetes, as a condition in itself, or in association with other disorders. Hypoglycemia occurs when levels of glucose, the body's main fuel, drop too low to fuel the body's activity. Carbohydrates (sugars and starches) are the body's main dietary sources of glucose. During digestion, the glucose is absorbed into the blood stream (hence the term "blood sugar"), which carries it to every cell in the body. Unused glucose is stored in the liver as glycogen. In the case of hypoglycemia, the mechanism for converting stored glucose (glycogen) back into usable glucose energy (glucose) by the body is faulty. The process normally involves the liver and other organs as well as various hormones.

A person with hypoglycemia may feel weak, drowsy, confused, hungry, and dizzy. Paleness, headache, irritability, trembling, sweating, rapid heartbeat, and a cold, clammy feeling are also signs of low blood sugar. In severe cases, a person can lose consciousness and even lapse into a coma.

## **What is new in diabetes research?**

In recent years, advances in diabetes research have led to better ways to manage diabetes and treat its complications. For example, the insulin pump, new oral medications, and better ways of monitoring blood glucose have become available. In the future, it may be possible to administer insulin through inhalers, a pill, or a patch. *Islet transplantation*, a procedure that can restore insulin production in patients with type 1 diabetes, is a highly promising area of research. Scientists also have found several genes that predispose people to both type 1 and type 2 diabetes. The National Institutes of Health is funding a large effort to find all the genes that influence getting diabetes. Once these genes are found, scientists hope to find new therapies. Devices are also being developed that can monitor blood glucose levels without having to prick a finger to get a blood sample. Researchers continue to search for the cause or causes of diabetes and ways to prevent and cure the disorder.

## For more information...

You can find out more about diabetes by contacting the National Women's Health Information Center 800-994-WOMAN (9662) or the following organizations:

### **National Institute of Diabetes and Digestive and Kidney Diseases**

Phone Number(s): (301) 654-4415

Internet Address: <http://www.niddk.nih.gov>

<http://www.niddk.nih.gov/health/diabetes/diabetes.htm> (links to NIDDK diabetes publications)

### **National Diabetes Education Program**

**Small Steps. Big Rewards. Prevent Type 2 Diabetes.**

Phone Number: (301) 496-3583

Internet Address: <http://ndep.nih.gov>

### **Centers for Disease Control and Prevention**

Phone Number(s): (800) 311-3435 (Public Inquiries) or (888) 232-3228  
(Information Request System)

Internet Address: <http://www.cdc.gov/diabetes/>

### **U.S. Food and Drug Administration**

Office of Women's Health

Take Time to Care ... About Diabetes

Phone Number: 1-800-DIABETES (1-800-342-2383)

Internet Address: <http://www.fda.gov/womens/taketimetocare/diabetes>

### **American Diabetes Association**

Phone Number(s): (800) 232-3472 or (800) 342-2383

Internet Address: <http://www.diabetes.org/main/homepage.jsp>

### **Juvenile Diabetes Foundation International**

Phone Number(s): (212) 785-9500 or (800) 533-2873

Internet Address: <http://www.jdf.org/>

This fact sheet was abstracted in part from publications of the National Institute of Diabetes and Digestive and Kidney Diseases, including Diabetes Overview, Hypoglycemia, and Diabetes Statistics.

All material contained in the FAQs is free of copyright restrictions, and may be copied, reproduced, or duplicated without permission of the Office on Women's Health in the Department of Health and Human Services; citation of the sources is appreciated.

*Publication date: March, 2003*